Claims

What is claimed is:

[c1] A monovalent cation containing well fluid comprising:

an aqueous brine containing at least 0.6 equivalents per liter of a water soluble monovalent cation salt and which is substantially free of divalent cation salt; and

an amount of a starch derivative selected such that the well fluid has the following characteristics: (a) a low shear rate viscosity greater than about 5,000 centipoise; (b) a high shear rate viscosity at 511 sec^{-1} in the range from about 15 to about 70 centipoise measured at 120° F.

[c2] The well fluid of claim 1, wherein the starch derivative comprises a pre-gelatinized crosslinked amylopectin starch which has been crosslinked to the extent that the viscosity of a basic aqueous amylopectin starch suspension undergoing crosslinking is within about 25% to less than about 50% of the maximum viscosity which can be obtained.

[c3] The well fluid of claim 1, further comprising a particulate bridging agent which is substantially insoluble in the aqueous brine.

[c4] A method of treating a well that comprises:

adding a monovalent aqueous brine containing at least 0.6 equivalents per liter of a water soluble monovalent cation salt and which has less than 0.6 equivalents of divalent cation salt; and an amount of a starch derivative selected such that the well fluid has the following characteristics: (a) a low shear rate viscosity greater than about 5,000 centipoise; (b) a high shear rate viscosity at 511 sec^{-1} in the range from about 15 to about 70 centipoise measured at 120° F to the well; and

causing the monovalent aqueous brine to travel through at least a portion of the well.

[c5] The method of claim 4, wherein the fluid further comprises a particulate bridging agent which is substantially insoluble in the aqueous brine.

[c6] A monovalent cation containing well fluid comprising:

an aqueous brine containing at least 0.6 equivalents per liter of a water soluble monovalent cation salt and less than 0.6 equivalents per liter of a water soluble divalent cation salt; and

a viscosifying agent including a starch derivative, wherein the starch derivative is a pre-gelatinized crosslinked amylopectin starch which has been crosslinked to the extent that the viscosity of a basic aqueous amylopectin starch suspension undergoing crosslinking is within about 25% to less than about 50% of the maximum viscosity which can be obtained.

[c7] The monovalent cation containing well fluid of claim 6, wherein the viscosifying agent is substantially free of xanthan gum.

[c8] The monovalent cation containing well fluid of claim 7, wherein the well fluid contain less than 0.25 lb/bbl xanthan gum.